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## (5) INTRODUCTION

### A. Statement of the Problem

A diagnosis of breast cancer and subsequent treatment can bring about significant distress, disruption and sexual dysfunction in the lives of women who experience them. Factors such as socioeconomic status, treatment modality, patient perceptions, coping strategies and social support have all been shown to influence the ways in which women adjust to these events. Behavioral interventions developed on the basis of the results of systematic studies of this adjustment process have the potential to foster positive expectancies about the future, can alter patient's coping responses and health maintenance behaviors, increase their sense of support from others, and facilitate an attitude of re-engagement with life. While studies of ethnic minority women have been conducted on breast cancer incidence and survival rates and on tendencies to use or avoid mammography (i.e., primary prevention) virtually no data exist on the predictors of psychosocial sequelae of breast cancer in these groups (i.e., secondary prevention). This represents a serious limitation in our ability to develop effective behavioral interventions to facilitate the adjustment process in these populations. A major focus of our research group has been to evaluate the efficacy and underlying mechanisms of behavioral intervention designed to facilitate psychosocial adjustment to breast cancer and its treatment, and to modify factors possibly associated with physical health and disease recurrence in breast cancer patients.

These research agenda, central to ongoing collaborative work between the Division of Health Psychology and the University of Miami School of Medicine, intersect with at least two fundamental questions included in the framework for basic, clinical and public health research projects put forth in the September 15, 1993 announcement of the U.S. Army Medical Research and Development Command. These fundamental research issues include:

- (1) Studying the impact of risk, disease, treatment and ongoing care on the psychosocial and clinical outcomes of breast cancer patients and their families;
- (2) Defining and identifying (intervention) techniques for delivering effective and cost-effective health care to all women to prevent, detect, diagnose, treat and facilitate recovery from breast cancer.

In order to address these research agenda it is necessary to bring together a multidisciplinary team of talented investigators with expertise in social psychology, behavioral medicine, clinical health psychology, biostatistics/epidemiology, psychiatry and oncology. Traditionally, however, lack of communication among scientists in different disciplines and limited competence in the methodologies of different disciplines have been major obstacles to successful integrative research. The present Training Program is designed to improve such communication and methodological competence through academic, practical, and research experiences focused on training in biopsychosocial aspects of breast cancer.

## B. Background of Previous Work

At the University of Miami we have overcome many of the obstacles noted above. First, an NIMH Center for the Biopsychosocial Study of AIDS under the direction of Carl Eisdorfer, M.D., Ph.D. brought together a large number of research scientists from different disciplines and taught them to work together on multidisciplinary research problems related to this other major health problem. These included several talented behavioral scientists, biomedical researchers and biostatisticians, and internists interested in the influence of behavior on health status in AIDS. At the same time our Division of Health Psychology was conducting an NHLBI Program Project on hypertension led by Neil Schneiderman, Ph.D. (Director of Health Psychology Division). This program project brought together behavioral scientists, physiologists, biochemists, and internists to conduct several interrelated studies exploring the influence of behavior, ethnicity and gender on the pathophysiology of cardiovascular disease and hypertension. Many of the scientists from the NIMH center and the NHLBI Program Project are now conducting research together and co-supervising graduate students and post-doctoral fellows in our associated training programs.

Over the past 7 years, two large training programs (NHLBI training program: HL07426-15; NIMH training program: MH18917-01) have facilitated the training of several pre-doctoral graduate students and post-doctoral fellows in our division of Health Psychology. Each of these training programs has brought together multidisciplinary faculty to train our students and fellows through the development of coursework, weekly research meetings, exposure to major scientists in the field who served as consultants, laboratory rotations, and closely supervised research and clinical experiences. Our present roster of research activities includes, but is not limited to two 5-year funded program projects (P01), several individual investigator awards focused upon breast cancer (ACS-funded, NCI-funded) and cervical cancer (NCI-funded), and a series of pilot studies used to develop and test experimental interventions with breast cancer patients.

A unique feature of the proposed training program is the fact that it exists within the context of ongoing research studies (R01), program projects (P01) and co-existing training grants all centered around the examination of the effects of behavior and ethnicity on adjustment to and progression of chronic diseases. Specifically, the NHLBI training grant and program project are focused upon examining the influence of behavior, ethnicity and gender on stress responsivity, hypertension and diabetes. A new focus of this work which commenced in YR 2 and continued throughout YR3 of this DoD training grant, examines the effects of cognitive-behavioral stress management (CBSM) intervention on mental and physical health status patients who are recovering from a myocardial infarction. The NIMH training grant and program project are both dedicated to exploring the effects of behavior and ethnicity on adjustment to and management of HIV-1 infection. During YR 3 another NIMH-funded R01 project commenced (P.I.: S.Weiss, co-P.I.: N. Schneiderman) to investigate the effects of a CBSM intervention (developed by Dr. Antoni) on adjustment in women with AIDS. Two ongoing psycho-oncology programs led by Dr. Antoni focus on the influence of behavior on health outcomes in minority women recently diagnosed

with early-stage breast cancer or pre-clinical cervical neoplastic changes. One of these, an NCI-funded project (NCI 5 P30CA14395) examines the role of stressors, coping and social support upon cervical neoplasia and related immune measures in African American women who carry multiple viral risk factors for cervical carcinoma. A recently completed second study funded by the American Cancer Society (ACS #PBR-82) explored the role of coping and social support as predictors of adjustment to mastectomy among African American and Hispanic American breast cancer patients. The latter study recruited patients through the Breast Health Center (Director: Neil Love, M.D.) within the NCI-funded Sylvester Comprehensive Cancer Center. With the completion of this study there was a large amount of data available for analysis by trainees and each has utilized this and other cancer-related databases to generate abstracts and manuscripts for presentation and publication.

In addition to the two psycho-oncology projects just described, several additional programs led or co-led by Dr. Antoni or Dr. Weiss and training program faculty were funded and commenced in YR 1 of the present training program and continued during YR 3. These included (1) an NCI-funded R01 project (1R01CA64710-01) entitled "Coping with Breast Cancer in Younger Women" (P.I. : C. Carver, co-P.I.: M. Antoni); (2) an NCI-supplemental project (1R01CA64710-01) entitled "Lifestyle and Breast Cancer in Cultural and Sexual Minorities" (P.I.: C. Carver); (3) an NCI-funded project entitled "PDQ/PIF Evaluation in Multiethnic Populations" (P.I.: S. Weiss); and (4) a developmental grant funded by the Sylvester Cancer Center entitled " Stress Management Intervention for Women with Breast Cancer"(P.I. : G. Ironson). During YR 3 one additional grant proposal was re-submitted to the DoD to investigate the effects of stress management on mood and immune function in early-stage breast cancer patients who have completed their adjuvant therapy (P.I.: G. Ironson, co-P.I.: S. Weiss). It is noteworthy that each of the ongoing projects as well as the one proposed projects involves the examination of the efficacy of psychosocial interventions with breast cancer patients, thus providing a large number of training opportunities for the trainees. Each trainee is involved in research activities on at least one of these breast cancer projects. The Sylvester Comprehensive Cancer Center (SCCC) has recently made funds available to serve as seed money for innovative oncology research ideas generated by our University's faculty and post-doctoral fellows. A number of pre-doctoral trainees have been involved in "co-writing " these small grants, which are submitted to the SCCC for seed money to do completely novel projects or to supplement pre-existing parent studies in order to address new questions. To date this has resulted in one trainee receiving funding to do an extensive immunologic assessment of breast cancer patients completing the CBSM intervention. Another trainee has recently co-submitted (along with a Training Program faculty member) a proposal to evaluate the effects of the CBSM intervention on objective (hormonal) indices of distress and arousal in breast cancer patients. These two supplemental projects will provide both an important training facet for these students as well as contributing in a significant way to our research program.

In sum, we continue to be in a unique position to provide rich training in psycho-oncology and breast cancer. First, we have available for study a large multiethnic population of breast cancer

patients. Second, our medical complex, including the SCCC, is the major treatment center for breast cancer patients in South Florida and is actively involved in ongoing clinical trials and basic biomedical research protocols. Moreover, Courtelis Center for Research and Treatment in Psychosocial Oncology, led by Dr. Weiss, the co-P.I. of this training grant, has developed into a major treatment and research center within the university and continues to play a central role in providing clinical and research training opportunities for our trainees. Third, we have a substantial number of extramurally funded research projects that are investigating relationships among psychosocial variables, health, adjustment and behavioral management of chronic diseases such as breast cancer, cervical cancer, HIV-1 infection, hypertension and diabetes. Fourth, we have a collegial, interactive faculty with demonstrated expertise in social psychology, behavioral medicine/clinical health psychology, epidemiology and biostatistics, psychiatry and oncology as these disciplines relate to the study of breast cancer. Fifth, we have a large pool of trainee applicants to our graduate program who are both qualified and interested in entering our training program and developing research careers. Sixth, our faculty is experienced in the intricacies of conducting collaborative research and training and has already worked together in administering two other health-related training grants.

#### C. Purpose of the Present Work

This program was designed to provide multidisciplinary research training in biopsychosocial aspects of breast cancer in the context of predoctoral training in Clinical Health Psychology leading to the terminal degree of Ph.D..

#### D. Methods of Approach

This program provides multidisciplinary research training in biopsychosocial aspects of breast cancer. Training is closely coordinated with ongoing research projects in breast cancer being conducted by Training Program faculty. The Training Program makes use of the faculty, resources, and experiences that are readily available at SCCC and those that we have secured from our ongoing NIMH and NHLBI training grants and parallel NIMH and NHLBI program projects (P01) that are focused on other chronic disease processes. Trainees are graduate students in Psychology (Health Psychology/Behavioral Medicine) and have offices in the Behavioral Medicine Research Center on the campus of the University of Miami School of Medicine Complex or at the Behavioral Medicine Research Building on the Coral Gables campus. The program was designed to offer the trainees the complete APA-approved academic program in Clinical Health Psychology in addition to participating in academic (didactic), research, and clinical activities specific to the biopsychosocial aspects of breast cancer. To accomplish these training goals, in addition to coursework, each trainee participates in our regularly scheduled psycho-oncology and breast cancer seminar/workshops held at the SCCC; and undergoes rotations in the psychosocial assessment, behavioral interventions, and statistics core laboratories at our Behavioral Medicine Research Center (BMRC) and at the SCCC. In addition each trainee is given the opportunity to complete other rotations in the immunology and biochemistry assay



core laboratories at the University of Miami School of Medicine. They gain direct research experience working on federally-funded research projects with several training faculty members who are actively working in research on breast cancer. One faculty member from the Health Psychology faculty is designated as primary preceptor and one faculty member from the Departments of Medicine, Oncology, Psychiatry or Epidemiology will serve as the secondary preceptor for each trainee. All trainees are exposed through coursework to experimental design and statistics as well as psychosocial, biobehavioral and pathophysiologic perspectives on breast carcinoma that are provided by way of didactic research seminars and clinical workshops.

## **(6) BODY**

### **A. Execution of Training Program Design**

Training throughout YR 3 continued to be closely coordinated with ongoing biopsychosocial breast cancer research projects including NCI-funded projects examining factors predictive women's adjustment to surgical mastectomy for primary disease. During YR 3 the NCI-funded project was exclusively focused on the implementation of a CBSM intervention with women recovering from mastectomy. Because the protocol for this project required that we recruit and screen a new cohort of patients every 5 weeks and then follow them over four timepoints with an assessment battery, there was ample opportunity from this project alone for all trainees to have multiple opportunities for patient contact for the purposes of assessment and intervention experiences. After completing a detailed 10-week training program in the use of the CBSM intervention, each trainee co-led (with a clinical psychologist) at least one 10-week CBSM group during YR 3. Throughout YR 3 trainees also participated in collecting data on two other breast cancer protocols. S. Alferi was involved in one of these studies examining the effects of CBSM on psychological adjustment, quality of life and immune system functioning in breast cancer patients who had already completed their adjuvant therapies (P.I.: G. Ironson), while B. McGregor worked on another protocol examining the psychosocial factors predictive of psychological adjustment to breast cancer diagnosis and treatment sexual minority women (P.I.: C. Carver). The training program was also able to make use of the faculty, resources, and experiences that we have secured from our ongoing NIMH and NHLBI training grants and parallel NIMH and NHLBI program projects (P01) that are focused on other chronic disease processes. All four of the trainees enrolled are graduate students in Psychology (Health Psychology/Behavioral Medicine) and have offices in the Behavioral Medicine Research Center and affiliated buildings on the campuses of the University of Miami including the School of Medicine Complex and SCCC.

In the current program each trainee participates in regular (weekly and monthly) psycho-oncology and breast cancer didactic seminars, workshops, grand rounds and tumor boards; undergoes rotations in the psychosocial assessment, behavioral interventions, and statistics core laboratories; and has the opportunity to complete other rotations in the clinical immunology and biochemistry assay core laboratories within the University's School of Medicine. During YR 3

each trainee gained experience working on research projects with several training faculty members who were actively working in research on breast cancer. One trainee completed her first year of our graduate program, two have developed plans for their Master's thesis—each focused on biopsychosocial aspects of breast cancer—and one is now completing a proposal for her dissertation study, which is also focused on biopsychosocial aspects of breast cancer. Another past trainee, C. Wynings, defended her dissertation and finished her clinical internship during YR 3. All trainees were exposed through coursework to experimental design and statistics as well as psychosocial, biobehavioral and pathophysiologic perspectives on breast carcinoma and other chronic diseases. The latter focus was extended by their attendance at the weekly Psycho-Oncology Clinical Workshop, weekly Breast Cancer Team Research Meeting, monthly Psycho-Oncology Research Seminar and the monthly Psychoneuroimmunology Journal Club meeting.

Trainee selection. As of September 1996, the beginning of YR 3 of the training program, four (4) trainees were participating in the program. Three of these were students who had been in the training program from the previous year (s) and one, S. Alferi, was newly enrolled. Their preceptors were as follows: J. Lehman-C.S. Carver; S. Alferi-/M.Antoni/G. Ironson/ S.Weiss, B. McGregor-M. Antoni/B.Blomberg, and A. Eisenberg- M. Antoni/ C. Carver. The progress of each trainee is detailed in a latter section of this report.

Training structure. As in prior years, a considerable amount of coursework and didactic training was available for trainees, though the major emphasis of the training program is upon direct involvement in research and focused clinical practica. All trainees (as well as other Health Psychology graduate students) spent a substantial portion of their time (approximately 20 hrs per week) conducting research throughout the calendar year. To facilitate this, Health Psychology students were restricted to 10 credits of coursework per semester. In addition to research and coursework the trainees completed clinical practica ranging from 7 - 10 hrs/week during the Fall, Spring and Summer semesters during YR 3. The balance of their time was spent attending various didactic experiences (detailed below) as part of the Training Program. S. Alferi was primarily involved in coursework during YR3 but also completed her first clinical practicum in the summer of 1997.

Coursework. Through courses offered in the Health (Clinical) Psychology Program all trainees receive combined training in behavioral medicine research and the development of closely related skills useful for research in health clinical psychology. (see YR 1 Annual Report for details). Briefly, all trainees are required to take a rigorous three semester experimental design and statistics sequence. The first semester of the experimental design and statistics sequence reviews introductory statistics, principles of experimental design, basic computer applications and data management. Subsequently, trainees take courses in Advanced Psychological Statistics and in Multiple Regression Statistics. Trainees must also complete *Core* courses in Psychobiology, Psychopathology, Social Psychology, and Developmental Psychology. In addition to *Core* courses each trainee will complete three courses in Assessment (general psychological assessment and two advanced specialty courses such as Psychological Assessment of Physical Disorders and

Neuropsychological Assessment, Advanced Projective Assessment), two additional courses in Pathology (from Fundamentals in Behavioral Medicine, Advanced Behavioral Medicine, Psychoneuroimmunology, Psychophysiology, Psychopharmacology, Advanced Experimental Psychopathology and Psychosomatics), and three courses in Intervention (chosen from Introduction to Psychological Intervention, Cognitive Behavioral Intervention, Psychological Intervention in Physical Disorders, Group Therapy, Family Therapy). At the time of pre-registration each trainee reviews their academic progress and chooses their coursework for the subsequent semester during a face-to-face meeting with their primary preceptor. Because many of the specific activities relating to breast cancer were initiated in YR 1 we included detailed descriptions of these in the YR 1 annual report in a section entitled: Program Development and Growth. For a review of these, please refer to the sections of that report.

## **B. Program Development and Growth**

This section provides an update of those YR 3 experiences and facilities central to the focus of this training program: the biopsychosocial aspects of breast cancer. This section is divided into Symposia/Didactic Experiences, New Ongoing and Pending Breast Cancer Research Protocols, and Cancer Center Facilities and Resources, Trainee Progress, and Publications and Presentations of Training Program Faculty and Trainees.

### **1. Symposia/Didactic Experiences**

The following activities constitute the present symposia/didactic experiences that are made available to trainees for the purpose of providing specific exposure to the biopsychosocial aspects of breast cancer. Some of these activities have mandatory attendance for trainees while others are optional:

- a. Ongoing Monthly Psycho-Oncology Research Seminar
- b. Weekly Clinical Psycho-Oncology Workshop
- c. Weekly Breast Cancer (NCI) Research Meeting
- d. Other Training-Related Activities
  - Weekly Multidisciplinary Breast Cancer Tumor Board Meeting
  - Weekly SCCC Grand Rounds
  - Monthly PNI Journal Club
  - Weekly Stress Management Group Clinical Supervision
- e. Clinical Rotations
- f. Research Rotations

a. Psycho-Oncology Research in Breast Cancer Seminar. At the outset of the training grant period we instituted a regular Seminar on Psycho-Oncology Research in Breast Cancer. This seminar was coordinated by Drs. Antoni, Weiss, and Schneiderman. The seminar met in the conference room of the SCCC for approximately 1 - 1.5 hours and was attended by surgical oncologists, psychiatrists, clinical psychologists, social case workers, and nurses who staffed the SCCC, VAMC and the University of Miami School of Medicine. During YR 3 this activity was

expanded to include Drs. Lilly Bourguignon who heads the Breast Cancer Program Seminar Series. Finally, trainees were encouraged to attend those SCCC Grand Rounds talks that were pertinent to breast cancer and other aspects of oncologic research. The following presentations were included in YR 3:

|                    |   |
|--------------------|---|
| Dr. P. Ghosh       | Alterations in signal transduction molecules in tumor-bearing hosts                           |
| Dr. D. Lopez       | Cytokine alterations during mammary tumorigenesis   |
| Dr. Carver         | Psychosocial factors predicting adjustment to surgical mastectomy                             |
| Dr. L. Bourguignon | CD44 variant expression during breast cancer progression                                      |
| Dr. F. Moffat      | Sentinel node biopsy for breast cancer patients   |
| Dr. S. Carraway    | Transduction of mitogenic signal through the P185/ErbB2/HER2 receptor in mammary cancer cells |
| Dr. N. Fregien     | Oncogene induced changes in tumor cell surfaces and metastases                                |
| Dr. C. Sandoval    | Common psychological and psychiatric symptoms in oncology patients                            |
| Dr. M. Needal      | What to say and not to say to families coping with cancer                                     |
| Dr. Antoni         | Behavioral interventions in psycho-oncology   |
| Dr. A. Mazumbder   | New approaches to immunotherapy of cancer   |
| Dr. H. Parnes      | Nutritional support of cancer patients  |
| Dr. A. Deisseroth  | Genetic approaches to cancer treatment  |
| Dr. E. Podack      | Genetic transfer in immunotherapy for cancer  |
| Dr. M. Kennedy     | Development in the cytotoxic treatment of breast cancer                                       |

b. Weekly Breast Cancer (NCI) Research Meeting- Each week during YR 3 all trainees attended a two-hour research meeting conducted by Drs. Antoni, Carver and Ironson in the Behavioral Medicine Research Building on the Coral Gables campus. Each meeting focused on two components: ongoing implementation of research protocols, and discussions of theoretical topics relevant to biopsychosocial aspects of breast cancer. This in the first hour, issues related to the day-to-day conduct of the ongoing ACS and NCI protocols are discussed. Specific topics centered around subject recruitment, assessment, randomized intervention methods, tracking and retention of subjects, data management and analytic strategies, preparation of reports for publication and presentations for scientific conferences. In most cases each trainee received their day-to-day supervision from one of the 4 post-doctoral fellows associated with this project who in turn reports to Drs. Antoni, Carver and Ironson concerning their research progress.

In the second hour of this meeting Drs. Carver, Antoni and Weiss led the group in discussions of various theoretical models underlying psychosocial research with breast cancer patients. Included here were topics such as the role of personality factors (e.g., optimism) in emotional adjustment to mastectomy and adjuvant therapy (C. Carver) and theoretical framework underlying the use of cognitive behavioral stress management intervention to aid in this adjustment process. In addition to detailing the theoretical components of their work, faculty led the group in discussion surrounding design, assessment and analytic strategies available to pursue

this line of research. These meetings were critical in shaping the direction and scope of trainees' thesis and dissertation plans that crystallized during YR 3. In addition to faculty and trainees this meeting was attended Dr. Love's staff and post-doctoral fellows who are working on the NCI protocols.

c. Weekly psycho-oncology clinical workshop. This workshop was directed by Alicia Capitaine-Ceballos, Ph.D., the Director of Clinical Services in the Psychosocial Oncology program housed at the Courtelis Center for Research and Treatment in Psychosocial Oncology at the SCCC. This weekly seminar uses a small group format to discuss clinical issues relevant to the psychological treatment of cancer patients. The workshop series curriculum for YR 3 was as follows:

|               |  |
|---------------|--|
| 9/18/96       | Mental Status Assessment/Psychopharmacological Management of Oncology Patients (C. Sandoval, M.D.) |
| 9/25/96       | Nursing Management of the Oncology Patient (S. Weiss, R.N., Ph.D.)                                 |
| 10/2/96       | Overview of Psychological Intervention at the Courtelis Center (S. Weiss, R.N., Ph.D.)             |
| 10/9/96       | Case Conference/Group Supervision (Y. Brown, Ph.D., Susan Yount, Ph.D.)                            |
| 10/16/96      | Clinical Oncology: A Crash Course (N. Spector, M.D.)   |
| 10/23/96      | Death and Dying Issues in Oncology: Didactic/Discussion (B. Kaplan, Ph.D.)                         |
| 10/30/96      | Treatment Specific Psychosocial Issues: Bone Marrow Transplant (S. Yount, Ph.D.)                   |
| 11/6/96       | Case Conference/Group Supervision (A. Ceballos, Ph.D.)   |
| 11/13/96      | Treatment Specific Psychosocial Issues: Radiation Therapy (A. Bernstein, Ph.D.)                    |
| 11/20/96      | Treatment Specific Psychosocial Issues: Pain Management (P. Reynolds, M.D.)                        |
| 12/4/96       | The Role of Social Work in Oncology (L. Grenier, LCSW)   |
| 12/11/96      | Process Group on Death and Dying Issues (B. Kaplan, Ph.D.)   |
| 12/18- 1/1/97 | NO MEETINGS-Holiday Break  |
| 1/8/97        | Case Conference/Group Supervision (A. Ceballos)  |
| 1/15/97       | Hospice Services for Oncology Patients (Lynn Farr, Catholic Hospice)                               |
| 1/22/97       | Role of the Family in Oncology (A. Ceballos, Ph.D.)  |
| 1/29/97       | Role of Social Work in Oncology (L. Grenier, LCSW)   |
| 2/5/97        | Case Conference (A. Ceballos, Ph.D.)   |
| 2/12/97       | Introduction and Demonstration of the CIS/NCI Facilities (J. Cornille)                             |
| 2/19/97       | Nutrition Issues in Oncology Patients (C. Murray, Ph.D.)   |
| 2/26/97       | No seminar   |

|         |  |
|---------|--|
| 3/5/97  | Cancer Survivors: Psychological Sequelae<br>(A.Ceballos, Ph.D.)  |
| 3/12/97 | Music Therapy in the Oncology Setting<br>(Theresa West)  |
| 3/19/97 | Treatment Specific Psychosocial Issues: Pain Management in<br>Oncology Patients (Carlos Sandoval, M.D) |
| 3/26/97 | Complementary Cancer Therapies<br>(C. West, Ph.D.)   |
| 4/2/97  | Spirituality and Healing<br>(A. Ceballos, Ph.D.)   |
| 4/9/97  | Wrap up, review and feedback session   |

d. Other training-related activities. In addition to these regular activities related to research and clinical training each trainee was encouraged to attend other Cancer Center activities.

d. 1. *Weekly Multidisciplinary Tumor Board Meeting* provided trainees an opportunity to gain knowledge into the medical aspects of diagnosis and treatment procedures for breast cancer patients at various stages of disease. Dr. Sharlene Weiss led all aspects pertaining to psychosocial research and clinical activities during this meeting and fostered the involvement of interested trainees.

d. 2. *SCCC Grand Rounds.* The SCCC Grand Rounds, held each Friday at noon, provided trainees with opportunity to see research presented by leaders in the fields of oncology, immunology/microbiology, psychosocial oncology, epidemiology, and medical ethics. Most talks were presented by speakers from other universities as supported by funding from the SCCC.

d.3. *Monthly Psychoneuroimmunology (PNI) Journal Club.* This training activity was led by health psychology faculty (M. Antoni, G. Ironson) and SCCC faculty (A. Mazumder) who met with trainees and other health psychology graduate students and post-doctoral fellows to discuss recent articles and innovations in areas of design, assessment and intervention that are relevant to ongoing and planned PNI research in immunologic-related diseases and neoplasias. Cross fertilization of ideas from graduate students and post-doctoral fellows working in different disease areas (e.g., AIDS, cardiovascular disease, and cervical and breast carcinoma) was quite fruitful. Theoretical and practical issues involved in setting up independent research projects that supplement ongoing protocols were discussed and trainees were encouraged to propose small pilot protocols that can be supported by Training Program funds. In general the *PNI Journal Club* experience provided a regular source of research updates and stimulated independent thinking and expansion of ongoing hypothesis testing in a supportive collegial atmosphere. In addition to accessing the Journal Club for research updates each trainee was furnished with an internet account that allowed them to access large research information databases and services including the PNI research networks, MEDLINE/MEDSCAPE and PSY ABSTRACTS.

d. 4. *Clinical Supervision for the Stress Management Group Intervention.* Each week trainees attended a one-hour group supervision meeting that was focused on the intervention implemented in two ongoing breast cancer protocols that are evaluating the effects of cognitive behavioral stress management (CBSM) interventions. All four trainees attended these supervisory sessions which are grouped into two parts: an initial 10-wk training program and a continuing supervision of ongoing groups. The 10-wk training program uses a detailed treatment

manual and participant workbook that contains didactic materials, in-session exercises (role-playing stress management techniques and relaxation exercises), and homework assignments for each of 10 modules that make up the intervention used in the ongoing NCI intervention study led by Drs. Antoni, Carver and Ironson. After training was completed, advanced (2nd - 4th year in program) trainees led intervention groups with an experienced NCI-funded post-doctoral fellow or faculty member, and each session was audiotaped to facilitate supervision by Drs. Antoni and Ironson on a weekly basis. During YR 3, a total of 9 cohorts of women (8 cohorts for an NCI R01 project and 1 cohort for a study funded by an NCI Development Award) were available for trainees to obtain intervention experience. During this period, three trainees (B. McGregor [1 cohort], J. Lehman [2 cohorts], and A. Eisenberg [2 cohorts]) were involved in running CBSM groups with early-stage breast cancer patients. This activity is viewed as an important clinical experience that supplements the other general and specialized health-related clinical practica that students must complete as part of our APA-approved clinical program.

e. Clinical rotations. In addition to research and coursework all trainees are given the opportunity, after completing the appropriate pre-requisites, to take one or more clinical practicum rotations in Clinical Health Psychology that are currently available through our collaboration with the SCCC, Mt. Sinai Medical Center, the Division of Biobehavioral Medicine in the Department of Psychiatry, and the Veterans Administration Medical Center's Psychology Service. For instance, our clinical health psychology graduate students who rotate through the Medical School's Division of Biobehavioral Medicine's Chronic Medical Disease practicum are given the opportunity to focus on a psycho-oncology specialization in addition to other opportunities in Organ Transplant, Chronic Fatigue Syndrome, AIDS, and Diabetes. The psycho-oncology specialization involves consultation-liaison work with the Department of Oncology and is coordinated through the SCCC. A new clinical practicum coordinated between the Department of Psychology and the Division of Radiation Oncology commenced during YR 3. This practicum provides trainees with clinical assessment and intervention experiences with SCCC oncology patients who are undergoing radiation therapy and involves psychiatric screening, as well as individual, conjoint and family therapy consultation work. Another clinical practicum in psychosocial oncology is offered at Mt. Sinai Medical Center in Miami Beach. This practicum offers experiences in assessment and intervention with cancer patients dealing with a wide variety of issues such as pain and adjustment following surgery. At the VAMC, students may choose among rotations in Oncology, AIDS, Alcohol and Drug Rehabilitation, Inpatient Psychiatry and Outpatient Psychiatry. These clinical practicum rotations typically require 8 - 10 hrs/week over a span of two semesters.

*Evaluation of the progress of trainees* on each of these clinical rotations follows a standard format developed by the Department of Psychology wherein each trainee is assigned an on-site supervisor who meets with the trainee for at least two hours in individual and group supervisory sessions. The on-site supervisor reports to a designated clinical faculty member in the Department of Psychology on the trainee's progress twice each semester and provides the clinical committee with an extensive written evaluation of the trainee's progress. The clinical

committee jointly determines the sufficiency of the trainee's performance at the end of each semester.

f. Research rotations. An important part of our program is the opportunity it offers trainees to participate in multiple *Research Rotations*. Trainees are encouraged to participate in more than one project and to work in more than one Core facility before becoming fully committed to research in a particular laboratory. In terms of Core Rotations, students are exposed to the Psychosocial/Psychiatric Assessment (Dr. Antoni), Statistics (Dr. Ironson), Biochemistry (Dr. Kumar), Immunology (Dr. Fletcher) and Behavioral Intervention (Drs. Antoni and Ironson) laboratories concerned with ongoing projects involving cancer patients and other chronic disease populations. In addition to the initial Core rotations, trainees are expected to maintain continuing interactive collaboration between their selected research project and the Cores. During YR 3 we further developed an additional research laboratory alliance designed to provide training opportunities with immunologic assays specific to breast cancer. This laboratory, supervised by a new member the training faculty, Dr. Bonnie Blomberg (Associate Professor of Immunology/Microbiology), is located on the medical school campus. Here Dr. Blomberg has worked very closely with one of our trainees, Ms. Bonnie McGregor, to develop specific assays for breast cancer such as lymphoproliferative responses to the mucin, MUC-1, an ELISA for IgG antibodies to MUC-1, and a Lymphokine-activated killer cell assay for a breast cancer-related antigen.

Evaluation of trainee progress in each of these rotations is conveyed to Dr. Antoni and Weiss by each on-site supervisor on a monthly basis. We have also developed other research rotations within the SCCC, one focusing in the area of bone marrow transplant and another in the area of genetic screening and counseling of patients with a familial history of breast cancer. We will soon implement an extensive project to identify the psychosocial needs of patients within each of these settings.

## 2. Active Biopsychosocial Breast Cancer Research Protocols

One essential feature of the training program experience is the ability to offer trainees the opportunity to work on research projects focused on the biopsychosocial aspects of breast cancer. As stated previously, based upon grants existing at the commencement of the training program and those obtained during subsequent years, trainees have the opportunity to work on one of several different projects:

(1) An ACS-funded study (ACS #PBR-82; "Coping With Breast Cancer Among Low SES Blacks and Hispanics") exploring the role of coping and social support as predictors of adjustment to mastectomy among African American and Hispanic American breast cancer patients (P.I.: M.Antoni). This study recruited patients through the Breast Health Center within the SCCC. Although this project was completed during YR 2 it now provides a large database for trainees to examine relations between psychosocial predictor variables and adjustment to breast cancer over the months following surgery. A number of trainees are currently involved in



analyzing this data which resulted in the completion of one empirical manuscript submitted for publication and a number of abstracts presented at scientific meetings during YR 3;

(2) The Cross-sectional portion of an NCI-funded R01 project (1R01CA64710-01) entitled "Coping with Breast Cancer in Younger Women" (P.I. : C. Carver, co-P.I.: M. Antoni). This project was conducted during YR 1 and 2 , identifies the major concerns of breast cancer patients in the months following mastectomy and examines the psychosocial predictors of affective, interpersonal and psychosexual adjustment over this period. The chief variables under investigation include vulnerability/resilience, mediating variables of coping, perceptions of partner reactions to surgery, and quality of life. All trainees contributed significantly to the recruiting, scheduling and interviewing of over 240 women for this project. Two trainees (J. Lehman and A.Eisenberg) have developed their thesis and dissertation projects from this project. For her dissertation project, J. Lehman is examining the role of coping strategies as predictors of optimal emotional adjustment in the months after mastectomy. A. Eisenberg is studying factors underlying patients' reports of positive experiences (e.g., growth, insight) following the cancer diagnosis and treatment. S. Alferi has a preliminary plan to design a Master's Thesis investigating the role of ethnicity and optimism as predictors of adjustment to breast cancer diagnosis;

(3) Clinical trial portion of NCI-funded R01 project (1R01CA64710-01) entitled "Coping with Breast Cancer in Younger Women" (P.I. : C. Carver, co-P.I.: M. Antoni). This project was initiated during YR 2 and continued throughout YR 3, evaluates the efficacy of a group-based cognitive behavioral stress management (CBSM) intervention on an independent cohort of post-mastectomy patients. This intervention program was tailored to the special needs of younger early-stage breast cancer patients based upon the results of the prior ACS study as well as Part 1 of this NCI-funded project. Trainees participated extensively in the tailoring of the *Therapist Manual* as well as the *Participant Workbook* used to implement this program by way of weekly meetings with Dr. Antoni during the development of this protocol. The major outcomes in this study are affective, interpersonal and psychosexual functioning. This study recruits patients from the SCCC as well as from a network of surgical oncologists practicing throughout Dade and Broward counties. During YR 3 of the training grant, 8 cohorts of women were run through this protocol. As previously noted, three trainees have participated as group leaders in this CBSM intervention study. We are in the process of conducting an interim analysis of the effectiveness of this program. Here, trainees are intimately involved in data management and analyses and will similarly be involved in the preparation of research reports under the supervision of Drs. Carver and Antoni. Two trainees, B. McGregor and S. Alferi plan to use different aspects of this study as the basis for their dissertations. B. McGregor will be investigating the effects of CBSM on immunologic status of breast cancer patients using a panel of general and more specific cell-mediated and humoral immune indices that she chose in collaboration with Drs. Blomberg and Antoni. Ms. McGregor has worked extensively over YR 3 to develop the laboratory protocols to conduct these assays and has successfully secured seed money through a small grant submitted to the SCCC in collaboration with Dr. Blomberg. S. Alferi will be investigating the effects of CBSM on distress levels using self-report (questionnaire

and interview) and physiological (weekly pre-post CBSM session salivary cortisol) indicators and will also explore mechanisms underlying the distress reducing effects of CBSM in breast cancer patients for her dissertation research. To facilitate the conduct of these physiological assessments, she was successful in securing seed money through a small grant that she submitted with Dr. Antoni to the SCCC. For this work she has formulated a weekly sample collection protocol and will soon learn the technique for assaying salivary cortisol levels in cooperation with Dr. Kumar, the Director of our Biochemistry Core;

(4) An NCI-supplemental project (1R01CA64710-01) entitled "Lifestyle and Breast Cancer in Cultural and Sexual Minorities" (P.I.: C. Carver, co-P.I.: G. Ironson). This study as a supplement to the parent project just described, examines the special needs of lesbian breast cancer survivors, their concerns and their psychosocial adjustment. Based upon the results of this phase of the study a pilot study will develop and test the effectiveness of a CBSM intervention designed to meet the special needs and concerns of this specific sub-population of breast cancer patients. During YR 3, Ms. Bonnie McGregor led data collection on this project and developed a Master's Thesis (co-chaired by Drs. Carver and Antoni) examining the influence of sexual disclosure and social support on emotional adjustment following surgery in this sample;

(5) An SCCC Developmental grant entitled "Stress Management Intervention for Women with Breast Cancer" (P.I. : G. Ironson). This project tests the effects of a 10-week cognitive behavioral stress management intervention on the quality of life, distress, coping and immunologic status of women with early-stage breast cancer (who have completed adjuvant treatments) in a randomized experimental design. Women complete a comprehensive biopsychosocial assessment battery (including psychosocial interviews and questionnaires and blood draws for immunologic assays) at pre-intervention, post-intervention and at follow-up. During YR 3, one cohort of women completed this protocol. Two trainees played an active role on this project in YR 3: S. Alferi just completed CBSM training and served as a group leader, and B. McGregor participated in the blood draws and immune assays for this study.

It is noteworthy that each of projects (3) - (5) involves the examination of the efficacy of psychosocial interventions thus providing a key training opportunity for the trainees. Each trainee is involved in research activities on at least one of these breast cancer projects. At least four additional biopsychosocial projects dealing with breast cancer patients have been designed and submitted for funding consideration:

#### Recently Submitted or Funded Biopsychosocial Breast Cancer Research Protocols

(1) A 3-year project submitted to the DOD designed to examine the effects of CBSM on quality of life, immune function and health in older women who are dealing with the stress of diagnosis and surgery for early-stage breast cancer (P.I.: M. Antoni).

(2) A 3-year project submitted to the DOD designed to examine the effects of CBSM on distress and immune status in breast cancer patients who have completed their adjuvant therapies (P.I.: G. Ironson).

(3) A 3-year project submitted to the DOD designed to examine the effects of massage therapy on distress and health in breast cancer patients (P.I.: T. Field, co-P.I.: G. Ironson).

(4) A 5-year project submitted to the NIA designed to test the effects of CBSM on quality of life, immune status and infectious disease symptoms in older women (> 65 yrs) who are adjusting to the initial diagnosis and treatment for early-stage breast cancer (P.I.: M. Antoni).

(5) A 2-year project submitted to the Psychosocial Oncology Program at the SCCC to incorporate immune measures into an ongoing CBSM intervention with breast cancer patients (P.I., B. Blomberg; **Trainee: B. McGregor**). This project was recently funded by the SCCC and provides supplies and technical support to examine the effects of CBSM on lymphocytes phenotypes including T-cell subpopulations, B-lymphocytes, and natural killer (NK) cells as well as immune function measures such as lymphoproliferative responses to CD3 cross-linking, Th1 and Th2 cytokine production, interleukin (IL)-2 enhanced NK cell cytotoxicity to the breast cancer cell line MCF7, and B-cell proliferative responses to anti-mu and IL-4.

(6) A 2-year project submitted to the Psychosocial Oncology Program at the SCCC to evaluate weekly salivary cortisol responses to relaxation training exercises in breast cancer patients participating in the 10-week CBSM program and to relate these physiological responses to mood changes within each CBSM session and over the entire intervention period (P.I.: Dr. Antoni, **Trainee: S. Alferi**). This project was funded this week by the SCCC and provides supplies and technical support to conduct assays on weekly pre-post CBSM session salivary cortisol responses in 25 breast cancer patients in CBSM and in 25 breast cancer patients in the control group and 25 age-matched healthy women who will provide a single saliva sample matched for time of day with the CBSM pre-session samples. This project seeks to develop and test valid objective indices of distress reduction for tracking the progress of breast cancer patients enrolled in relaxation and distress reduction protocols.

These ongoing, recently funded and pending projects all deal with evaluating the concerns of breast cancer patients and the efficacy (and underlying mechanisms of action) of psychosocial interventions with this population across a wide range of ages and ethnic groups. Our ultimate goal is to have a comprehensive program of research that addresses the major concerns of breast cancer patients from different ethnic groups, SES groups and age groups at multiple stages of disease through the use of prospective natural history studies whose results lead directly to the development of theoretically-driven and empirically-validated psychosocial interventions specifically tailored to the chief concerns of breast cancer patients, and to modulating the mediators of psychosocial adjustment and physical health for each group. Our goal is to couch all of these activities in the context of a joint collaboration between the

Department of Psychology, the SCCC and the Departments of Medicine and Psychiatry. This collaborative arrangement not only facilitates the conduct of this research but also provides a state of the art training environment.

### 3. SCCC Programs, Facilities and Resources

A detailed description of the SCCC programs, facilities and resources was provided in the YR 1 annual report. This center continues to be a major organ for the conduct of the academic, research and clinical activities in this training program. Three major advances in the SCCC that occurred during YR 1 of the training program were noted in the previous annual report: the creation of the Courtelis Center for Research and Treatment in Psychosocial Oncology, the expansion of the SCCC Breast Cancer Research Program, and the formation of the SCCC Biopsychosocial Oncology Program. All of these developments were instrumental in the continued growth of the research and clinical opportunities available to trainees during the YR 3 period.

A major site of clinical training activities specific to breast cancer and psychosocial oncology is the Courtelis Center, a 5200 sq. foot facility located within the SCCC on the campus of the University of Miami School of Medicine. It contains 10 individual therapy/consultation offices, a treatment room with washroom, toilet and shower which is used for acupuncture, massage therapy and physical therapy; a group therapy room, a conference room, and a classroom; and two patient waiting areas with audio and video equipment available for patient use. Specifically the Courtelis Center provided the following clinical opportunities for trainees: psychiatric, psychological and social work consultation; individual, family and group counseling; stress reduction techniques such as biofeedback, relaxation, and imagery techniques and massage; acupuncture; nutritional counseling; pastoral counseling; a patient education library; and a community outreach program made up of seminars, workshops and retreats which integrate physical, psychological and spiritual dimensions of healing. The Center is staffed by a multidisciplinary team of clinical psychologists, psychiatrists, clinical social workers, nurses, and post-doctoral fellows and provides a training site for psychology interns as well as the pre-doctoral health psychology graduate students participating in this training program. During the YR 3 period, J. Lehman completed a two-semester clinical rotation at the Courtelis Center.

During the YR 3 period, the Breast Cancer Research Program continued to expand its portfolio of breast cancer-relevant projects. As noted in the previous annual report, this program is organized into three project areas--*Basic Science Program, Clinical Research Program, and Cancer Control Program*--and a central core facility, the multidisciplinary Breast Cancer Evaluation Center whose director is Sharlene Weiss, Ph.D., the co-P.I. of this training program. Trainees completing rotations in the SCCC had the opportunity to complete a large volume of psychosocial screening and assessment batteries with patients attending these various programs.

The Psychosocial Oncology Program, the newest program to be developed at the SCCC encompasses the Multidisciplinary Breast Cancer Center, the Psycho-Oncology component of the Cancer Control Program, and the Courtelis Center for Research and Treatment in Psychosocial Oncology. This program achieves its aims *by providing core resources for pilot studies* to develop and/or integrate common data elements for cross-study comparisons of different populations; *establishing collaborative relationships with ongoing programs in other departments* (e.g., psychology, psychiatry) and laboratories to foster multidisciplinary research; *convening regular seminars and research meetings between P.I.s of ongoing projects* and potential new investigators and others in training to facilitate communication between laboratory and clinical investigators; and by *establishing a comprehensive psycho-oncology database* for all clinical oncology patients. Several activities during YR 3 were fostered by this program including the funding of two seed grants and the development of the genetic screening program for women with a familial history of breast cancer.

Special Events During YR 3 of the Training Program. *The symposium on Stress and Coping* sponsored by the Department of Psychology and the School of Medicine was a 2-day Symposium focused this year on Stress, Coping and Depression. This symposium was attended by training faculty and trainees and involved empirically-based presentations by national and international behavioral medicine researchers. Although the topics of these talks did not involve Psycho-Oncology many generic issues relevant to the role of depression in adjustment to chronic disease and in the conduct of behavioral medicine research (statistical analytic models, stress-coping theoretical models, and methodological issues involved in the assessment of coping) were included. Training faculty and trainees presented a number of abstracts and papers in the scientific program of the Society of Behavioral Medicine held in San Francisco in April 1997. Our team also presented papers at the annual scientific meetings of the International Psycho-Oncology Society, American Psychosomatic Society and the American Psychological Association during 1996 and 1997. All students attending these meetings to present the results of their research were subsidized for their travel costs by the Department of Psychology.

#### 4. Progress of Trainees

The focus of this training program on academic coursework, research participation, publication and presentation at professional meetings, and clinical rotations. Therefore all trainees are evaluated each semester for their progress in three general categories: academic and research progress, publication and presentations, and clinical activities. *Academic and research progress* is evaluated through grades in graduate courses within the clinical health psychology doctoral program, formal end-of-semester evaluations determined by health psychology faculty, progress toward the completion of the Master's thesis and dissertation, evaluation of weekly involvement in breast cancer research protocols and related activities, and participation in the preparation of grant proposals. *Publication and presentations* refer to the trainees' involvement the preparation of manuscripts pertinent to breast cancer and psycho-oncologic topics, and the preparation and presentation of abstracts at scientific meetings. Specific publications and

presentations of trainees and training program faculty are listed in section 6. *Clinical activities* are evaluated by way of the written reports of on-site supervisors which are further evaluated by the Clinical Committee in the Department of Psychology. Only those trainees who successfully fulfill the qualitative and quantitative criteria for their clinical practica are allowed to proceed to subsequent clinical placements.

Jessica Lehman  
Preceptor: C.S. Carver, Ph.D.

GRE: 1340

G.P.A.: 3.87 Goshen College

Academic and research progress. Since joining the training program Ms. Lehman has completed advanced pre-doctoral coursework in family therapy, neuroanatomy, psychological intervention in physical disorders, and social psychology. As part of our graduate program requirement she also taught an undergraduate course in the Psychology of Women. During YR 3 she formulated her dissertation project which will examine how coping strategies and optimism predict impairment of daily activities post-diagnosis and treatment during the initial 6 months after surgery in two samples of early stage breast cancer patients. This dissertation, chaired by Dr. Carver, will include over 240 women who have completed the NCI-funded and ACS-funded projects mentioned previously. During the YR 3 period Ms. Lehman continued to be extensively involved in both the ACS and NCI projects of Drs. Antoni and Carver. She worked 15 -20 hrs /week in various project activities including: recruiting subjects, conducting psychosocial interviews, training new students, maintaining liaison with the surgical oncology offices, managing the project database, and entering data from the interviews.

Publications and presentations. During this period Ms. Lehman also co-authored an 2 empirical manuscripts entitled: Additionally, she co-authored two abstracts presented at the 1997 Society of Behavioral Medicine meeting entitled "*Investigating the concerns of early stage breast cancer patients*", and "*Do breast cancer patients experiencing increased positive contributions to life after diagnosis report less mood disturbance?*"

Clinical activities. Ms. Lehman co-led two CBSM groups as part of the NCI protocol during YR 3. In addition to these activities Ms. Lehman completed one clinical practicum rotation at the SCCC where she gained specific assessment and intervention experience with patients with different types of cancer. This post also involved coleading orientation seminars for cancer patients (a majority of which are breast cancer patients) preparing for bone marrow transplant and providing psychological support for patients in the transplant unit during their stay. She is currently enrolled in a clinical practicum at Mt. Sinai Hospital's psychosocial oncology service where she is gaining experience in psychosocial intervention with breast cancer and prostate cancer patients. During YR 3 Ms. Lehman also attended weekly meetings of the Breast Cancer research team, the monthly PNI Journal Club meetings, the weekly Clinical Psycho-oncology workshop and several of the breast-cancer focused meetings at the SCCC. She will be applying for a clinical internship position during YR 4. Based upon her coursework and dissertation progress, her active participation in breast cancer research protocols and the

evaluations of her on-site clinical supervisors, this trainee is making excellent progress in academic coursework, teaching, research training and clinical training.

Bonnie McGregor

GRE Total: 1250

GPA:3.28 Pacific Lutheran

Preceptors: M.H. Antoni, Ph.D., B. Blomberg, Ph.D.

Academic and research progress. Ms. McGregor completed her B.S. degree from Pacific Lutheran University in 1984 and before completing two years in a histocompatibility lab conducting tissue typing and cross matching for bone marrow, kidney and heart transplants. This post-graduate experience led her to the research she has been conducting for the past 7 years on examining B-lymphocyte defects and cytokine regulation abnormalities in bone marrow transplant patients at the Fred Hutchinson Cancer Center at the University of Washington School of Medicine. During this period Ms. McGregor also managed the clinical immunology laboratory service for the cancer center and was responsible for tracking changes in immune function over the one-year post-transplant period and acquiring, organizing, and analyzing patient data for both research and clinical purposes. Ms. McGregor expressed a particular interest in focusing her graduate training in Health Clinical Psychology in the area of psychosocial intervention and psychoneuroimmunologic aspects of psycho-oncology with a special emphasis on breast cancer.

Ms. McGregor began the training program in YR 2. Since joining the training program Ms. McGregor has enrolled for the full academic load of core courses and has been working 15 -20 hrs/wk on research-related activities. During YR 3 Ms. McGregor was extensively involved in two NCI-funded studies. One project examines the effects of a CBSM intervention on early-stage breast cancer patients' adjustment following mastectomy. As part of her work on this project, Ms. McGregor developed a sub-project to assess immunologic changes that occur over the intervention period. This subproject was approved by the University's IRB and commenced in early 1996. This sub-project will form the basis for her dissertation and will require two years to complete. In order to conduct the immune assays for this study, Ms. McGregor obtained space in the immunology laboratory directed by Dr. Bonnie Blomberg, an Associate Professor of Immunology and Microbiology at the University of Miami School of Medicine. In addition to conducting more general assays for lymphocyte phenotypes and cellular and humoral immune functioning in Dr. Blomberg's lab, Ms. McGregor is working to develop antigen-specific immune assays for her research with breast cancer patients in collaboration with the Clinical Research Laboratory at the SCCC under the supervision of Dr. Parotosh Ghosh. Dr. Blomberg is overseeing all of Ms. McGregor's activities in Microbiology/Immunology while Dr. Antoni is supervising all of her activities in psychosocial assessment and intervention. Initially some of the supplies necessary for setting up the laboratory protocol for conducting these assays was supported by the training grant. During YR 3 Ms. McGregor was successful in applying for seed money from the SCCC to cover some additional supplies and technical support to conduct a more extensive battery of assays on these samples. In the context of developing the blood draw and assay activities for this protocol this trainee gained specific experience in biopsychosocial

applications of psychotherapeutic interventions and psychoneuroimmunology to breast cancer—her primary interest area. To date a number of patients enrolled in the NCI intervention study have provided blood samples as part of the protocol for this substudy.

During YR 3 Ms. McGregor also took a leadership role in the data collection for an NCI study examining psychosocial factors predictive of emotional adjustment to breast cancer in sexual minority women. This required her to coordinate data collection from several urban centers across the country. She has used this database to formulate her Master's Thesis, a study investigating the role of sexual orientation disclosure and social support in adjustment to mastectomy in this subpopulation.

Publication and presentations. During YR 3 Ms. McGregor also presented a paper at the Society of Behavioral Medicine meeting examining the effects of clinical qualifying examination stress on B-cell related measures in advanced graduate students. She also networked with colleagues at the Fred Hutchinson Cancer Center to conduct analyses of data from a bone marrow transplant study that she had completed before moving to Miami and which she plans to use for her Master's thesis. During YR 3 Ms. McGregor attended all of the mandatory trainee meeting activities, and also attended the monthly PNI Journal Club meetings and several activities at the SCCC. She was also very successful in establishing excellent working relationships with the Research Assistants and Post-Doctoral Fellows working in Microbiology/Immunology and other breast cancer psycho-oncology research at the University's medical school and at the SCCC.

Clinical activities. During YR 3 Ms. McGregor completed a full-year rotation at the Psychological Services Center where she gained experiences in individual, family and couples therapy as well as psychological assessment. She is currently slated to begin a rotation at the Miami VAMC where she will be working with patients suffering from terminal diseases including cancer.

Based upon her coursework and thesis progress, her participation in breast cancer research protocols and the procurement of seed money for supplemental projects, presentation of research findings at scientific meetings, and the evaluations of her on-site clinical supervisors, this trainee is making excellent progress in the training program.

Amy Eisenberg      GRE Total: 1320  
Preceptors: M. H. Antoni, Ph.D., C.S. Carver, Ph.D.

G.P.A: 3.51 U. Penn.

Academic and research progress. Ms. Eisenberg was admitted to the training program shortly before the commencement of YR 2. Before joining the program she completed her undergraduate training at the University of Pennsylvania where she worked in the laboratory of Dr. Martin Seligman conducting studies on the correlates of attributional style. After completing her degree she worked at the Memorial Sloan-Kettering Cancer Center as a full-time research assistant with Sharon Manne, Ph.D. conducting an NCI-funded longitudinal study examining how couples cope with breast and colon cancer and chemotherapy treatment over a 4-month period. During YR 3 in our training program Ms. Eisenberg completed a full academic load of advanced



coursework in health psychology applications to assessment and intervention with medical patients and also completed the last course in advanced multivariate statistical analysis. She worked 15 -20 hrs/wk on breast cancer research-related activities.

Specifically she was extensively involved in an NCI cross-sectional study examining major concerns post-mastectomy and factors associated with adjustment in the months following surgery. On this team she has gained experience in patient contact and recruitment, telephone administration of questionnaire packets, coordinating with the network of surgical oncology offices involved in the study, and database management. Based upon her work on this project Ms. Eisenberg has developed a special interest in studying how breast cancer patients' perception of positive experiences surrounding diagnosis of cancer are predictive of emotional adjustment in the months following surgery, an area that formed the basis of her Master's Thesis. She attended weekly meetings of the Breast Cancer research team, monthly PNI Journal Club meetings and the monthly Biopsychosocial research meeting at the SCCC. During YR 3 she continued to gain extensive clinical experiences with cancer patients. Ms. Eisenberg served as a group leader for the two CBSM groups in the NCI intervention project.

Publications and presentations. During YR 3 Ms. Eisenberg co-authored (with Sharon Manne, Ph.D. and Deborah Miller, Ph.D) an abstract that was presented at the 1997 annual meeting of the Society of Behavioral Medicine entitled, "Predictors of Coping Effectiveness Among Cancer Patients". This paper is based on research she conducted at Memorial Sloan Kettering Cancer Center over the two years prior to joining our program. She also presented an abstract at the Society of Behavioral Medicine conference entitled "*Do breast cancer patients experiencing increased positive contributions to life after diagnosis report less mood disturbance?*"

Clinical activities. During YR 3, Ms. Eisenberg completed advanced practicum placements at the VAMC involving patients with advanced cancers and other terminal diseases. She is currently enrolled in a clinical practicum at the Division of Radiation Oncology at the SCCC where she is gaining assessment and intervention experience with patients undergoing radiation therapy for breast cancer and other conditions. Based upon her coursework and thesis progress, her participation in breast cancer research protocols, presentation of research findings at scientific meetings, and the evaluations of her on-site clinical supervisors, this trainee is making excellent progress in the training program.

Susan Alferi                      GRE Total: 1270  
Preceptors: M.H. Antoni, Ph.D., G. Ironson, M.D., Ph.D.

G.P.A: 3.93 U.Miami

Academic and research progress. Ms. Alferi was admitted to the program in August, 1996. Before coming to the program she had obtained a number of years experience working with behavioral medicine researchers at the University of Miami concurrent with her completion of an undergraduate degree in Psychology in which she graduated magna cum laude. She is currently enrolled in a full load of academic coursework, attends the weekly NCI Research group meeting

and is working on the NCI project in the role of recruitment, screening and psychosocial interviewing of women with early-stage breast cancer. Her duties on the project currently include organizing the participant files, reviewing all incoming mail, coordinating participant tracking, coordinating cohort windows and target dates, conducting phone screens and data entry. As part of the project, she has also been a co-therapist of the 10-week CBSM intervention on another study of breast cancer patients being conducted by Drs. Ironson and Weiss. Susan is currently working on her Master's thesis examining ethnic and cultural differences in partner relationships of breast cancer patients. Very recently, she prepared a grant proposal (with Dr. Antoni) which was funded by the SCCC to examine the effects of relaxation training on salivary cortisol in breast cancer patients throughout the 10 week CBSM intervention. This study will serve as the basis of her dissertation.

Publications and presentations. Ms. Alferi co-authored two empirical journal articles during YR 3, these based upon her prior work at the university. She has submitted one abstract to be presented at the Society of Behavioral Medicine in April, 1998.

Clinical activities. Ms. Alferi is currently enrolled in a practicum at our Psychological Services center where she is gaining skills in psychological assessment and different forms of intervention in patients presenting with a variety of mental health problems. This practicum serves as a preparation for work in more specialized practica focused on medical patients. In addition to her practicum placement Ms. Alferi has also worked at the SCCC in the Courtelis Center serving as a co-Leader for a CBSM group led by Dr. Sharlene Weiss. Based upon her coursework, her participation in breast cancer research protocols and the procurement of seed money for supplemental projects, presentation of research findings at scientific meetings, and the evaluations of her on-site clinical supervisors, this trainee is off to an outstanding in the training program.

Christina Wynings

GRE: 1440

G.P.A.: N/A Yale/Stanford

Ms. Wynings completed the training program at the end of YR 2. Just prior to the commencement of YR 3 Ms. Wynings successfully defended her dissertation and secured an APA-approved clinical internship at the Northwest Dade Community Center in Ft. Lauderdale, Fl. In July 1996 she submitted a proposal to the DOD for a post-doctoral fellowship in psychosocial research in breast cancer that was designed to apply her thesis and dissertation findings concerning the buffering effects of social support in trauma victims to the context of breast cancer patients adjusting to surgery and treatment for breast cancer. Unfortunately this proposal did not receive a priority score in the fundable range. She is in the process of applying for post-doctoral fellowships in the area of psychosocial oncology.

## **5. Publications and Presentations of Training Faculty and Trainees During YR 3**

### **PUBLICATIONS IN REFEREED JOURNALS**

\* trainees

- van der Pompe, G., Antoni, M.H. & Heijnen, C. (in press) The relations of plasma ACTH and cortisol levels with the distribution and function of peripheral blood cells in response to a behavioral challenge in breast cancer: An empirical exploration by means of statistical modelling. *International Journal of Behavioral Medicine*.
- Storek, J., Mendelmen, P., Witherspoon, R., McGregor, B.\* & Storb, R. (in press) IgG response to pneumococcal polysaccharide-protein conjugate is not better than IgG response to polysaccharide in marrow transplant recipients and in normal adults. *Clinical Infectious Disease*.
- Mulder, N., Antoni, M.H., van der Mast, R., & Duivenvoorden, H. (in press) Stressful life events and coping resources as determinants of psychiatric symptoms during one year in HIV-infected homosexual men. *Psychological Medicine*.
- Perna, F., Antoni, M.H., Kumar, M., Cruess, D., & Schneiderman, N. (in press) Cognitive behavioral intervention effects on mood and cortisol during athletic training. *Annals of Behavioral Medicine*.
- Kumar, A., Weiss, S., Fernandez, J., Cruz, D., & Eisdorfer, C. (in press) Peripheral serotonin levels in women: Role of aging and ethnicity. *Gerontology*.
- van Der Pompe, G., Antoni, M.H., & Heijnen, C. (in press) The effect of existential experiential group psychotherapy on basal endocrine and immune parameters in women with breast cancer. *Journal of Psychosomatic Research*.
- van der Pompe, G., Antoni, M.H., & Heijnen, C. (in press) The effects of surgical stress and psychological stress on the immune function of operative cancer patients. *Psychology and Health*.
- Lutgendorf, S., Antoni, M.H., Ironson, G., Starr, K., Costello, N., Zuckerman, M., Klimas, N., Fletcher, M.A., & Schneiderman, N. (in press) Changes in cognitive coping skills and social support mediate distress outcomes in symptomatic HIV-seropositive gay men during a cognitive behavioral stress management intervention. *Psychosomatic Medicine*.
- Carver, C. S. (in press). Generalization, adverse events, and development of depressive symptoms. *Journal of Personality*.
- Carver, C. S., Pozo-Kaderman, C., Price, A. A., Noriega, V., Harris, S. D., Derhagopian, R. P., Robinson, D. S., & Moffatt, F. L., Jr. (in press). Concern about aspects of body image and adjustment to early stage breast cancer. *Psychosomatic Medicine*.

- Burnett, K., Ironson, G., Benight, C. C., Wynings, C\*, Greenwood, D., Carver, C. S., Cruess, D., Baum, A., & Schneiderman, N. (in press). Measurement of perceived disruption during rebuilding following Hurricane Andrew. *Journal of Traumatic Stress*.
- Carver, C. S., & Scheier, M. F. (in press). *On the self-regulation of behavior*. New York: Cambridge University Press.
- Carver, C. S., & Scheier, M. F. (in press). Themes and issues in the self-regulation of behavior. In R. S. Wyer, Jr. (Ed), *Advances in social cognition* (Vol. 12). Mahwah, NJ: Erlbaum. (target article)
- LaPerriere, A., Ironson, G., Antoni, M.H., & Schneiderman, N. (in press) Psychoneuroimmunologic benefits of exercise. *Sports Medicine*.
- Benight, C., Antoni, M.H., Kilbourn, K., Ironson, G., Kumar, M., Fletcher, M.A., Schneiderman-Redwine, L., Baum, A., & Schneiderman, N. (1997) Coping self-efficacy buffers psychological and physiological disturbances in HIV-infected men following a natural disaster. *Health Psychology*, 16, 1-8.
- Ironson, G., Wynings, C\*, Schneiderman, N., Baum, A., Rodriguez, M., Greenwood, D., Benight, C., Antoni, M.H., LaPerriere, A., Huang, H., Klimas, N., & Fletcher, M.A. (1997) Post traumatic stress symptoms, intrusive thoughts, loss and immune function after Hurricane Andrew. *Psychosomatic Medicine*, 59, 128 - 141.
- McKinney, C., Antoni, M.H., Kumar, M., Tims, F., & McCabe, P. (1997) Effects of guided imagery and music (GIM) therapy on mood and cortisol in healthy adults. *Health Psychology*, 16 (4), 390-400.
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- van der Pompe, G., Antoni, M.H., & Heijnen, C. (1996) Elevated basal cortisol levels and attenuated ACTH and cortisol responses to acute stress in women with metastatic breast cancer. *Psychoneuroendocrinology*, 21, 361 - 374.
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- Carver, C. S. (1996). Emergent integration in contemporary personality psychology. *Journal of Research in Personality* (Special Issue, I. G. Sarason Ed.), 30, 319-334.
- Scheier, M. F., & Carver, C. S. (1996). Psychological resources matter, no matter how you say it or frame it. *The Counseling Psychologist*, 24, 736-742.

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#### MANUSCRIPTS UNDER REVIEW

Spencer, S. M., Lehman, J. M\*, Wynings, C\*, Arena, P., Carver, C. S., Antoni, M. H., Derhagopian, R. P., Ironson, G., & Love, N. Concerns of a multi-ethnic sample of early stage breast cancer patients and relations to psychosocial well being (under review).

Carver, C. S., Harris, S. D., Lehman, J. M\*, Durel, L. A., Antoni, M. H., Spencer, S. M., & Pozo-Kaderman, C. How important is the sense of personal control? Studies of early stage breast cancer patients? (under review).

van der Pompe, G., Antoni, M.H., Vries-Kragt, K., Pelgrim, F., Visser, A., Vries, M. Prediction of psychological adjustment to breast cancer after participation in group psychotherapy: An empirical exploration. *British J. Clinical Psychology*. (under review).

Lutgendorf, S., & Antoni, M.H. Emotional and cognitive processing in a trauma disclosure paradigm. *Cognitive Therapy and Research*. (under review)

van der Pompe, G., Antoni, M.H., Visser, A., & Heijnen, C. Immune and cardiovascular responsivity to a standardized laboratory challenge in breast cancer patients and healthy women. *Cancer Immunology and Immunotherapy*.

Witherspoon, R., McGregor, B\*, Danyu, L., Mori, M. & Storb, R. Recombinant human Interleukin-4 proliferation of B lymphocytes from chronic GVHD patients. (under review)

#### BOOKS AND CHAPTERS

Chesney, M. & Antoni, M.H. (in press) *Health psychology and HIV disease: From transmission to treatment*. American Psychological Association Press.

Antoni, M.H., Schneiderman, N., & Ironson, G. (in press) *Stress Management for HIV-Infection*. Society of Behavioral Medicine Clinical research Guidebook Series. N.J.: Erlbaum Press.

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- Antoni, M.H. ( in press) Integrating the MCMI and the MMPI. In T. Millon & R. Davis (Eds), *The Millon Inventories*. N.Y.: Guilford Press.
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- LaPerriere, A., Kilbourn, K., Schneiderman, N., Antoni, M.H., Fletcher, M.A., Ironson, G., & Klimas, N. (in press) Exercise medicine in AIDS. In A. Laperriere (Ed), *A handbook of exercise medicine*. N.Y.: Gordon & Beach Science Publishers, Inc.
- Carver, C. S., Spencer, S. M., & Scheier, M. F. (in press). Motivation, optimism, and mental health. In H. S. Friedman (Ed.), *Encyclopedia of Mental Health*. San Diego: Academic Press.
- Carver, C. S. (in press). Optimism. In E. Blechman & K. Brownell (Eds.), *Behavioral medicine and women: A comprehensive handbook* (pp. 145-151). New York: Guilford.
- Spencer, S. M., Carver, C. S., & Price, A. A. (in press). Psychological and social factors in adaptation to cancer. In J. Holland, W. Breitbart, P. Jacobsen, M. Lederberg, M. Loscalzo, M. J. Massie, & R. McCorkle (Eds.), *Textbook of psycho-oncology*. New York: Oxford University Press.
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- Ironson, G., Antoni, M.H., & Woods, T. (in press). Psychosocial intervention in HIV

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Hinkle, Y., & Antoni, M.H. (in press) Pregnancy and HIV-1 : Bidirectional effects. In E. Johnson et al (Eds.), *AIDS in African-Americans and Hispanics: The role of behavioral and psychosocial factors*. Praeger Press.

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- Carver, C. S. (1996). Goal engagement and the human experience. In R. S. Wyer, Jr. (Ed.), *Advances in social cognition* (Vol. 9, pp. 49-61). Mahwah, NJ: Erlbaum.
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## PUBLISHED ABSTRACTS

- Antoni, M., Lutgendorf, S., Ironson, G., Fletcher, M.A., & Schneiderman, N. (1997) CBSM intervention effects on mood and immunity in HIV+ gay men: The role of relaxation training, coping skills and social support. *Psychosomatic Medicine*, 59, 81.
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## PAPER PRESENTATIONS

- Meyer, B., & Carver, C. S. (August 1997) *Predicting affect via exposure to stressful events and self-reported sensitivities to threat and reward*. American Psychological Association, Chicago,.
- Byrnes, D., Antoni, M., Goodkin, K., Ironson, G., Asthana, D., Efantis-Potter, J., Simon, T., Munajj, J & Fletcher, M.A. (June, 1997). *Stressful life events, repressive coping, pessimism, and natural killer cell cytotoxicity in women with Human Immunodeficiency Virus and Human Papillomavirus*.

Paper presented at the National Conference on Women and HIV. Washington, D.C

- Spencer, S. M., Wynings, C\*, Lehman, J\*, Antoni, M. H., Love, N., & Carver, C. S. (April 1997) *Investigaing the concerns of early stage breast cancer patients*. Society of Behavioral Medicine, Sa Francisco,.
- Eisenberg, A\*, Lehman, J\*, Antoni, M. H., & Carver, C. S. (April 1997) *Do breast cancer patients experiencing increased positive contributions to life after diagnosis report less mood disturbance?* Society of Behavioral Medicine, San Francisco,.
- Kilbourn, K. M., Antoni, M. H., Wagner, S., Carver, C. S., Ironson, G., Fletcher, M. A., & Schneiderman, N. (April 1997) *Denial coping predicts increases in signs of disease progression in HIV+ gay men over the two years following Hurricane Andrew*. Society of Behavioral Medicine, San Francisco,.
- Lehman, J. M\*, Antoni, M. H., Lutgendorf, S., Carver, C. S., & Klimas, N. (April 1997) *Coping responses following Hurricane Andrew and symptom exacerbations in chronic fatigue syndrome patients*. Society of Behavioral Medicine, San Francisco,.
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- Baldewicz, T., Costello, N., Antoni, M., Lehman, J\*, Klimas, N., Ironson, G., Flecther, M.A., & Schneiderman, N. (April, 1997) *Emotional expression is related to greater psychological distress and IL-6 production in CFS patients*. Paper presented at the Society of Behavioral Medicine meeting, San Francisco, CA.
- McGregor, B\*, Antoni, M., Meyer, B., & Blomberg, B. (April, 1997) *Psychological stress is associated with decreased B lymphocytes*. Paper presented at the Society of Behavioral Medicine meeting, San Francisco, CA.
- Kilbourn, K., Antoni, M., Wagner, S., Carver, C., Ironson, G., Fletcher, M.A., & Schneiderman, N. (April, 1997). *Denial coping and Hurricance-related distress predict increases in serum neopterinb in HIV+ gay men over the two years following Hurricane Andrew*. Paper presented at the Society of Behavioral Medicine meeting, San Francisco, CA.
- Penedo, F., Antoni, M., Szapocznik, J., Ironson, G., Zuckerman, M., Fletcher, M.A., & Schneiderman, N. (April, 1997) *Acculturation and immune fuction in gay HIV+ Hispanic and non-Hispanic men*. Paper presented at the Society of Behavioral Medicine

meeting, San Francisco, CA.

Spencer, S., Wynings, C\*, Lehman, J\*, Antoni, M., Love, N., & Carver, C. (April, 1997) *Investigating the concerns of early stage breast cancer patients*. Paper presented at the Society of Behavioral Medicine meeting, San Francisco, CA.

Goldstein, A., LaPerriere, A., Klimas, N., Antoni, M., Ironson, G., Talluto, C., Maik, G., Fletcher, M.A., & Schneiderman, N. (April, 1997) *Exercise improves depressed mood in early symptomatic HIV-1 infection*. Paper presented at the Society of Behavioral Medicine meeting, San Francisco, CA.

Weiss, S. (March, 1997) *Alternative treatments in Breast Cancer*. Presented at the Joint Cancer Conference of the Florida Universities, Orlando.

Perna, F., Antoni, M.H., Kumar, M., & Schneiderman, N. (October, 1996) *Psychological skills training decreases cortisol and improves mood and coping among competitive rowers*. Paper presented at the annual scientific meetings of the Society for the Advancement of Applied Sport Psychology, Williamsburg, VA.

Cruess, D., Reynolds, P., Pozo-Kaderman, C., Antoni, M.H., & Millon, T. (October, 1996) *Personality characteristics and affective status among cancer patients referred for pain management and psychological treatment*. Paper presented at the International Conference on Psycho-Oncology. Memorial Sloan-Kettering Cancer Center. N.Y.

Weiss, S. (September, 1996) *Training breast cancer survivors to facilitate community support groups*. NCI Information Associates Annual Meeting. N.Y.

Weiss, S. (August, 1996) *Spirituality and Healing panel*. Presented at the American Psychological Association. Toronto, CA.

Antoni, M.H. (August, 1996) *Emotional expression in the face of stress: Physiological correlates*. Invited keynote address at the Conference on Emotional Expression in Health and Disease. Tilburg, NTH.

Antoni, M.H. (August 1996) *Emotional expression and the promotion of cervical neoplasia*. Paper presented at the Conference on the Expression of Emotion in Health and Disease. Tilburg, NTH.

Weiss, J., Mulder, C., & Antoni, M.H. (July, 1996) *Active coping impacts the relationship between physical symptoms and psychological distress in HIV positive gay men*. Paper presented at the XI International Conference on AIDS. Vancouver, CA.

Weiss, S. (June, 1996) *Psychosocial treatment advances in breast cancer*. U.S. Senate Cancer Committee Hearings. Wash., D.C.

## (7) CONCLUSIONS

YR 3 of the training program was quite successful in accomplishing the general mission of providing multidisciplinary research training in biopsychosocial aspects of breast cancer in the context of predoctoral training in Clinical Health Psychology.

Four trainees were enrolled in the training program in YR 3. Training was closely coordinated with ongoing ACS-funded and NCI-funded biopsychosocial breast cancer research projects. All trainees were exposed through coursework to experimental design and statistics as well as psychosocial, biobehavioral and pathophysiologic perspectives on breast carcinoma and other chronic diseases. The latter focus was extended through the program's weekly Psycho-Oncology Clinical Workshop, weekly Breast Cancer Team Research Meeting, monthly Psycho-Oncology Research Seminar and the monthly Psychoneuroimmunology Journal Club meeting. There was a significant amount of development and growth in the training program across the following areas: Symposia/Didactic Experiences; Active Biopsychosocial Breast Cancer Research Protocols; Cancer Center Programs, Facilities and Resources; Trainee Progress; and Publications and Presentations of Training Program Faculty and Trainees. All four trainees appear to be making excellent progress in coursework, research training and clinical training.

Two additional biopsychosocial projects were designed by trainees and their preceptors and received funding from the SCCC during YR 3. These projects deal with evaluating the effects of a psychosocial intervention on endocrine and immune functioning in an effort to identify the health-promoting mechanisms underlying these interventions. We continue to make progress toward our ultimate goal of building a comprehensive program of training and research that addresses the major concerns of breast cancer patients from different ethnic groups, SES groups and age groups at multiple stages of disease through the use of prospective natural history studies whose results lead directly to the development of theoretically-driven and empirically-validated psychosocial interventions specifically tailored to the chief concerns of these patients. All of these activities are couched in the context of a joint collaboration between the Department of Psychology, the SCCC and the Departments of Medicine and Psychiatry at the University of Miami. This collaborative arrangement provides a state of the art training environment.